

U.S.S.N. 10,789,793

Claim Amendments

Please amend claims 1-3, 5-8, 10, 12-14, 16-19 as follows:

Please cancel claims 20-24 as follows:

Please add new claims 25-29 as follows:

U.S.S.N. 10,789,793

Listing of Claims

1. (currently amended) An electroplating apparatus for increasing a plated metal thickness uniformity comprising:

a reservoir for holding an electrolyte fluid comprising metal ions for electroplating;

an anode and a cathode, said cathode for holding a wafer provided in said reservoir;

an electrical pathway provided between said cathode and said anode; and

a shield provided between said cathode and said anode, wherein said shield is vertically adjustably moveable during an electroplating process.

2. (currently amended) The electroplating apparatus of claim 1 wherein said shield comprises a body shape selected from the group consisting of a generally ring-shaped shield body and a plate shaped ring body.

U.S.S.N. 10,789,793

3. (currently amended) The electroplating apparatus of claim 1 [[2]] further comprising an electrically-conductive material provided on an outer surface of said shield body for providing a source of said metal ions.

4. (original) The electroplating apparatus of claim 3 wherein said electrically-conductive material comprises copper.

5. (currently amended) The electroplating apparatus of claim 1 [[3]] further comprising a shield current source electrically connected to said shield for selectively applying at least one of a positive and a negative charge to said shield.

6. (currently amended) The electroplating apparatus of claim 1 [[2]] wherein said shield body comprises an electrically non-conductive material.

7. (currently amended) An electroplating apparatus for increasing a plated metal thickness uniformity comprising:

a reservoir for holding an electrolyte fluid comprising metal ions for electroplating;

U.S.S.N. 10,789,793

an anode and a cathode, said cathode for holding a wafer provided in said reservoir;

an electrical pathway provided between said cathode and said anode; and

a shield ~~comprising a generally plate-shaped shield body~~ provided between said cathode and said anode, said shield having a body shape selected from the group consisting of a ring-shaped shield body and a plate shaped ring body;

wherein said shield is vertically adjustably moveable during an electroplating process.

8. (currently amended) The electroplating apparatus of claim 7 further comprising an electrically-conductive material provided on said shield body for supplying said metal ions.

9. (original) The electroplating apparatus of claim 8 wherein said electrically-conductive material comprises copper.

U.S.S.N. 10,789,793

10. (currently amended) The electroplating apparatus of claim 7 further comprising a shield current source electrically connected to said shield for selectively applying at least one of a positive and a negative charge to said shield.

11. (original) The electroplating apparatus of claim 7 wherein said shield body comprises an electrically non-conductive material.

12. (currently amended) A method of electroplating a metal on a wafer to increase a plated metal thickness uniformity, comprising:

providing a reservoir containing an electrolyte fluid comprising metal ions for electroplating;

providing an anode and a cathode in said reservoir, said cathode holding a wafer provided in said reservoir;

providing an electrical pathway between said cathode and said anode;

U.S.S.N. 10,789,793

providing a shield in said electrolyte fluid between said cathode and said anode, wherein said shield position is vertically adjustably moveable between said cathode and said anode during an electroplating process; and

applying a current to said cathode and said anode to plate said metal ions onto said wafer in said electroplating process.

13. (currently amended) The method of claim 12 wherein said shield comprises a body shape selected from the group consisting of a ~~generally~~ ring-shaped shield body and a plate shaped ring body.

14. (currently amended) The method of claim 12 ~~[[13]]~~ further comprising an electrically-conductive material provided on an outer surface of said shield body for providing a source of said metal ions.

15. (original) The method of claim 14 wherein said electrically-conductive material comprises copper.

U.S.S.N. 10,789,793

16. (currently amended) The method of claim [[14]] 12 further comprising a shield current source electrically connected to said shield for selectively applying at least one of a positive and a negative charge to said shield.

17. (currently amended) The method of claim 16 further comprising selectively applying said negative charge to said shield for electroplating [[a]] said metal ions onto said shield and applying a positive charge to said shield for releasing said metal cations ions from said shield into said electrolyte fluid.

18. (currently amended) The method of claim [[13]] 12 wherein said shield ~~body~~ comprises an electrically non-conductive material.

19. (currently amended) The method of claim 12 wherein said shield ~~comprises a generally plate shaped shield body~~ has a diameter greater than said anode diameter and is positionally aligned about centered on said wafer.

Cancel claims 20-24

U.S.S.N. 10,789,793

25. (new) The electroplating apparatus of claim 1, wherein the shield has a diameter greater than the anode and is positionally aligned about centered on the wafer.

26. (new) The electroplating apparatus of claim 1, wherein the cathode and wafer are rotatable with respect to the shield during the electroplating process.

27. (new) The electroplating apparatus of claim 7, wherein the shield has a diameter greater than the anode and is positionally aligned about centered on the wafer.

28. (new) The electroplating apparatus of claim 7, wherein the cathode and wafer are rotatable with respect to the shield during the electroplating process.

29. (new) The method of claim 12, wherein the wafer is rotated relative to the shield during the electroplating process.

U.S.S.N. 10,789,793